Submission to the AER on SA Power Networks Revised Regulatory Proposal 2015-2020

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This submission reflects only my opinions as an individual, and does not reflect the official position of any group or organisation. Statistics about the billing and load profile of Lakes Sports and Community Club (West Lakes, SA) have been publicly disclosed here and elsewhere with permission.

Contents

[On Customer Engagement: 3](#_Toc425519469)

[Being Cost Reflective: 5](#_Toc425519470)

[The Power of Choice: 7](#_Toc425519471)

[Cost Reflective Tariffs 8](#_Toc425519472)

[Example Violations of the Principles from Table 1: 10](#_Toc425519473)

[More problems with Demand Tariffs: 11](#_Toc425519474)

[Inigo Montoya’s submission on SAPN’s tariff proposal 12](#_Toc425519475)

[The Energeia Study: 13](#_Toc425519476)

[Concluding thoughts: 15](#_Toc425519477)

[Conclusion: 16](#_Toc425519478)

# On Customer Engagement:

“Our Customer Engagement Program also identified that customers strongly support the introduction of capacity tariffs.” (Original proposal, 257)

This statement is just one of the many results presented to the AER which misrepresent customer views terribly. How can customers strongly support capacity-based tariffs when most customers do not understand them at all? In its revised proposal, SAPN asks the AER to examine SACOSS’s survey methodology. I would ask that the same level of analysis (whatever the AER chooses) be applied to SAPN’s presented results. It will be clear who is misrepresenting the public.

If SAPN’s conclusion about support for capacity tariffs was based on a survey, and the question(s) educated customers about capacity tariffs before asking an opinion, then that information would have biased the results. If there was no prior education about the tariffs, then customers would not have had a basis for a decision. I suspect that this question presented the capacity tariff as the lowest-cost option, which is what customers really preferred by choosing it. This criticism is similar to that which SAPN casts on SACOSS’s analysis, but I don’t believe that bias was introduced in SACOSS’s survey methodology. The issues are more clearly problematic in SAPN’s surveys.

We could also be looking at biased reporting of results. SAPN used the inexact term “strongly support”, yet there is not enough information available to the reader in order to assess its meaning. There are many tricks which can bias perception of results, for example listing many factors which are important to customers, yet leaving out “lower bills”, the number one issue for many, if not most customers. The survey methodology has already been studied for the AER, and I agree that the questions are confusing enough that respondents face issues with accurately responding. “Second-to-lowest-cost” is not a surprising answer from someone who has no idea what offers the best value for them[[1]](#footnote-1). Analysis must take known effects into account, and there is a limit to the quality of results that can be obtained through surveys of the ignorant.

There is such a problem with customer confusion that SAPN believes it is required “To undertake a comprehensive customer and retailer engagement program to ensure that customers and retailers understand the tariff”.[[2]](#footnote-2) This is expected to take years, at a great cost to SAPN ($5 million in OPEX and $5 million in CAPEX is being asked for in the revised proposal). SAPN says it better than I ever could:

“All customers in our trial received a one hour personal consultation at the start to explain the tariff in detail and answer questions. In spite of this, these customers went on to contact the call centre an average of eight times each over the summer period, with a typical contact time of 3.5 – 5 minutes per call.” (Revised Proposal, attachment H.7 page 10)

There are many problems with the tariff, and surely some of these customers have brought those problems to the attention of SAPN, just as I have. No amount of propaganda is going to ‘educate’ customers about the fact that the tariff is fair or makes any sense, because it isn’t true. Customers may not understand the concept of ‘cost reflective pricing’, but they can feel the effects of prices which are not cost reflective. It’s that feeling of being forced to take some action when you can clearly see that it makes no difference to anyone. Jumping through hoops, dancing like puppets, “Why do they make me do this!?!?” This is what customers on Demand Tariffs feel like, because the tariff is not cost reflective, nor even close to cost reflective for them. While other tariffs have *small* departures from cost-reflectivity for some individual customers, Demand Tariffs can exhibit extreme price instability, leaving customers with a bill that varies but uncontrollably.

SAPN’s revised solution to its customer confusion problem includes putting the bulk of customer complaints onto retailers, which is absurd. Retailers are not the source of the issue and will be unable to respond to customer needs. This would further insulate SAPN from having to address the many problems with Demand Tariffs, increasing its lack of accountability for violations of The Rules.

Last year, the AER challenged me to educate people about Demand tariffs (a form of Capacity Tariff, explained in detail later on). It is clear from my experience that the topic is extremely confusing to individuals. Even those who believed that they understood the Demand Tariff usually could not explain the circumstances which would make it more ‘cost reflective’ than strict accumulation, while others mistakenly believed that Demand is always more cost reflective than Time of Use. Some of this confusion stems from SAPN’s own mistaken claims, which will be discussed in the next section.

To conclude this section on Customer engagement, I’ll just point out a couple other misrepresentations of customer views:

-Every reference to customer support for cost-reflective tariffs is magically transformed by SAPN into support for Demand Tariffs, for example a quote from Business SA in Attachment H.7.

-‘Customers prefer bills based on actual usage rather than estimates’ is, incredibly, transformed into customer support for monthly manual meter reads at increased cost.

# Being Cost Reflective:

SAPN has written a great deal in its proposal about its new ‘cost reflective’ tariffs, yet I can find precisely zero words in its proposals which provide evidence that Demand Tariffs are cost-reflective. One would imagine that somewhere in the thousands of pages it has submitted that there would be some evidence or explanation about what makes a Demand Tariff more cost reflective than other options for all customers. I can find only assertions. If they had evidence, why wouldn’t they present their case here, knowing that the AER is skeptical? Previous evidence is clearly insufficient, thus they cannot be relying on that. It is actually very simple to prove (by construction of an example) that Demand Tariffs are not cost reflective for some customers, especially small ones.

*Cost Reflective Pricing*: The price paid by a customer for a good or service is based on the cost of providing that good or service to that customer. In the National Electricity Market, Distribution Networks must set prices according to the *long-run marginal cost* that a *prudent and efficient* DNSP would incur in providing services. This promotes *efficient* use of the network by customers.

Some misconceptions about what it means to be ‘cost reflective’:

Being cost reflective does not mean that the network must charge customers mostly fixed charges because most of its costs are fixed. That is silly. Every business has some proportion of fixed costs, yet almost every business can price cost-reflectively on volume alone. Only businesses which are engaged in *demand stimulation* will include fixed charges along with volume. This includes buffet restaurants, shopping ‘clubs’ with memberships, and mobile phone plans with included usage. The mobile phone plan comparison is perhaps the most important, since the AER Chairman, Paula Conboy, has said that electricity contracts could look like mobile phone plans in the future. This is a very dangerous model, as any demand stimulation necessarily results in inefficient use of the network, therefore increased costs to consumers[[3]](#footnote-3).

Being cost reflective does not mean that the network must charge customers based on their individual peaks because the network costs are based on its peak. The contribution to the network peak is a customer’s usage during the network peak, which may or may not be that customer’s individual peak. In cases where the individual peak is not aligned with the network peak, the Demand charge is not cost-reflective. Peak volume is the correct measure of a customer’s expected contribution to the peak.

Why is cost reflectivity part of the National Electricity Rules?

In competitive markets, prices are set to maximize profit, not to reflect costs. Competition causes prices to stabilize at the cost of service plus a mark-up, making the profit-maximizing price also a cost-reflective one. The mark-up first offsets any fixed costs, then becomes profit to the seller.

Monopolies like the power networks are different. Lack of competition means that profit-maximizing prices are higher than cost-reflective prices. Maximum profit comes from setting prices in order to exploit *customer elasticity of demand*.*[[4]](#footnote-4)* Long-term profit also comes from creating policies that keep customers using the network despite price increases (lowering elasticity and stimulating demand).

Cost reflectivity also ensures that customers are provided with correct incentives when deciding how to use their electricity and how to invest in efficiency.

# The Power of Choice:

In 2012, the Australian Energy Market Commission (‘AEMC’) Power of Choice Review determined that customers would benefit from a number of changes to the National Electricity Rules (‘The Rules’), including the requirement for DNSP’s to offer more cost-reflective tariffs. As suggested by the name of the review, ‘Choice’ is another key requirement for efficient use of the network.

The problem addressed by the Power of Choice Review is that usage charges for many customers don’t consider the time that the energy was used. Network costs are based primarily on the capacity required for peak times. For example, in SA, network peaks occur only during extreme heat on weekdays before 5pm[[5]](#footnote-5). The cost of providing service during those few hours (literally, just a few hours per year) are driving up prices for energy use at other times, when the true cost of off-peak usage is very small. Now that meters can record usage at different times, prices can vary based on time-of-use, which is more cost-reflective than ‘anytime energy’ charges. Cost-reflective pricing guarantees that customers are charged fairly and rewarded properly for efficient changes in behaviour. The Review notes that there may be several tariff structures which fit this model, and there may be more than one way for customers to act efficiently. It concludes that efficient network use requires customers to have the Power of Choice in their network tariff. Customers understand their usage patterns far better than networks, thus can choose a tariff based on how well they can adapt to the prices and price signals. The networks have been some of the strongest supporters of cost reflective tariffs, and one even wrote that the AER should do nothing which prevents customers from having the option to be on the most cost reflective tariff for their operations. I could not agree more.

In response to the Power of Choice Review, SA Power Networks acknowledged that choice is important to customers. It offered its largest business customers the ‘choice’ to switch to a tariff based on Peak Demand (and even the ‘choice’ of their Annual Demand level), which it argued was cost-reflective “for the largest customers at all voltage levels”.[[6]](#footnote-6) Customers using over 100amps (medium and large businesses) could switch to the Demand Tariff ‘VLVS’, though it would be mandatory for new customers of this size. SAPN praised itself for the choice it offered existing customers in the last regulatory period. It should be no surprise that the so-called choice turned out to be the first step of a forced migration. In its latest proposal, SAPN has removed all choice and has (finally) admitted its plans to migrate all customers onto Demand Tariffs. This is a very serious problem, as Demand Tariffs are not cost-reflective for large numbers of small customers.

Customers who attempt to connect Solar Panels or Battery Storage are specifically targeted for discrimination in this migration because they are being treated as “new customers”, triggering the mandatory tariff switch noted above. This clause is now holding back the efficient uptake of technology, simply through the threat it makes. Tariffs which are not cost-reflective can have devastating effects on customers, and the response is predictably absurd and inefficient.

# Cost Reflective Tariffs

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| --- |
| Cost-Reflective Pricing Prevents Exploitation of Customers by Monopoly Networks  1) Prices must be based on the efficient long-run marginal cost of providing that component of service.  2) Policies and prices cannot discriminate against any class or sub-class of customers.  3) Charges which vary based on customer behaviour must do so in predictable and stable ways. |

Table : Some necessary conditions for a Tariff or Charging Parameter to be 'cost-reflective'

The principles in Table 1 are necessary conditions for a tariff to be considered cost-reflective. They are not hard to satisfy. Even the basic accumulation tariff meets these requirements, except for the minor issue that it cannot differentiate between peak and off-peak usage. No tariff will be able to perfectly reflect costs, and issues like metering also limit the ability of tariffs to identify differences in usage patterns and costs. Below are some features which have been designed to improve cost-reflectivity of the basic accumulation tariff:

*Seasonal pricing* was introduced long ago to recognize that network peaks occur in Summer, thus charges for usage in Summer should be higher than at other times. While this has the impact of increasing prices for usage during non-peaks in Summer, the problem does not result in an extreme departure from cost-reflectivity during that time. Overall, seasonal pricing appears to have had a positive impact on promoting efficient use of the network.

*Inclining Block* tariffs (higher $/kwh for usage greater than particular thresholds) have improved cost-reflectivity for most residential customers. Importantly, these additions did not significantly reduce the cost-reflectivity of the tariff for any individual customer. The higher price assumes that a large proportion of usage is during peak times, which not true for every customer. However, the difference in price is not extreme, thus is not a significant problem for any individual customer. Overall, Inclining Block tariffs have had a positive impact on promoting efficient use of the network.

*Controlled-Load* tariffs offer savings to customers who contract to have a second meter installed which tracks a load used only during off-peak times. This is similar to Time-of-Use pricing, but more restrictive. With the introduction of meters which can track usage over different time periods, Controlled Load tariffs should be obsolete. The impact on efficient use of the network is questionable, as critics have noted that Controlled Load tariffs have actually *created* local spikes in usage from customers switch on their loads simultaneously.[[7]](#footnote-7) Another issue is that this tariff promotes residents to keep water heated all night rather than heating it just before morning, an inefficient use of energy for customers with poorly-insulated water tanks.

*Time of Use* pricing adds cost-reflectivity by charging higher prices during times of expected or potential network peaks. This implies that the price of usage during off-peak hours can be set lower, reflecting the lower cost to the network of usage during those times. The peak charge, billed over many hours, collects revenue necessary to pay for the few hours of actual network peak. Time of Use pricing increases cost reflectivity for most customers. There would, however, be a few customers whose usage is high during peak times but do not contribute to actual network peaks, thus the Time of Use tariff is not more cost-reflective for everyone. An appropriate definition of ‘peak time’ is necessary. An meter which can record time of use is required.

*Maximum Demand* pricing adds cost-reflectivity for customers whose individual usage patterns are all similar and predictable. It charges a higher price during times of expected or potential network peaks based on the customer’s maximum energy demand over the entire period, either per month or per year. In South Australia, network peaks occur only during times of extreme heat, which may happen for just a few hours per year. Customers who exhibit usage spikes during actual network peaks are charged more than just the increased consumption charges for that usage, and the networks have presented evidence that for some subsets of customers, this is more cost-reflective than basic accumulation charges[[8]](#footnote-8). This allows off-peak consumption charges to be lower, reflecting the lower cost to the network of usage during those times.

Maximum Demand pricing adds cost-reflectivity for customers whose usage spikes along with others, which is currently based strongly on temperature, as well as time of day. However, maximum Demand pricing is not cost-reflective for a number of reasons, such as for customers whose individual usage spike is not related to temperature, or is inversely related to it. A meter of similar complexity to the time-of-use meter is required, although customers will require more information if they hope to be able to respond to the Demand price signal. More problems with Demand Tariffs are listed in the next section.

*Critical Peak / Dynamic Peak / Temperature of Use:* Observe that all of the previous tariffs had fixed peak and off-peak times. That is a limitation on their cost-reflectivity. The tariffs described here have prices which vary based on actual network peaks. They allow for peak charging to be performed only during actual peaks, and offer low prices for all other times. The Critical Peak price would necessarily be very high, as nearly the same revenue collected over longer periods must be collected over just a few hours. The price volatility inherent in not knowing how many critical peak events will occur, and when, is mitigated by the strong ability for customers to respond to the price signal. In the lead-up to cost-reflective tariffs, networks are meant to be studying customer demand so that they are able to price these tariffs appropriately for their region. It may not always be the case that temperature drives peak demand, but for the moment SA could use Temperature as a guide for defining critical peaks. In the long-run, if customers respond to the price signal, the price of critical peaks can come down, reflecting the much lower costs.

A meter that records intervals is required for dynamic tariffs, as well as a method for warning customers of peak times and retrieving consumption data over those times (this could be done by the meter or by analysis of interval data).

*Feed in Tariffs*: Currently, feed in tariffs are zero, except for legacy stimulus payments to early adopters. As energy fed into the network is effectively negative consumption, it should be subject to the same cost-reflective tariffs as positive consumption. Implicit is that the networks must also work to maximize the utility of solar and distributed energy, as that is what a prudent and efficient operator would do for the long-term interest of customers. Proper feed-in tariffs would serve to lower network costs by properly paying customers more for energy fed in during peak times, which is effectively increased network capacity.

# Example Violations of the Principles from Table 1:

Recall Principle 1: “Prices must be based on the efficient long-run marginal cost of providing that component of service.”

This Principle would be violated if the Supply Charge for small customers is far higher than the cost of connecting to the network. This cost is very small, essentially just the line connecting you to the poles and wires, plus very limited customer service (under $200/year, historically). Customers who do not use their connection do not add to the cost of shared infrastructure, thus it is not ‘cost-reflective’ to include these costs in the Supply Charge[[9]](#footnote-9). Most of us would be willing to pay a much higher cost for our network connection, thus we have ‘low elasticity of demand’, and are at risk of overcharging. This is an imminent threat, since the AER has just removed the $10 cap on annual supply charge increases for small customers.

Recall Principle 2: “Policies and prices cannot discriminate against any class or sub-class of customers.”

Principle 2 would be violated if 1) the price of an Export Meter (for Solar customers) included a mark-up which is far higher than the mark-up for other meters, 2) if the services provided to Solar customers were inferior, or 3) if existing customers who install Solar are forced onto tariffs that include violations of Principles 1 and 3. Charging Solar customers more per unit of energy is another form of discrimination, and the AER correctly rejected SAPN’s recent proposal to do precisely this.

Recall Principle 3: “Charges which vary based on customer behaviour must do so in predictable and stable ways.”

Principle 3 would be violated if a small customer were charged over $1000 for using 5 kwh more energy than usual, for just 30 minutes (7:30 to 8:00pm) on a mild day (max 20 degrees) without even any signal that this anomaly were occurring[[10]](#footnote-10). Though ‘price stability’ is subjective, this is clearly an unstable result. The direction of the price signal must also be correct. For example, another violation would occur if a customer were able to save money by shifting their load *into* the actual network peak. This would be possible in a Time-of-Use Tariff if the Peak period did not include the time of the actual network peak, or if a customer were influenced by a charging parameter that was not-at-all cost-reflective[[11]](#footnote-11).

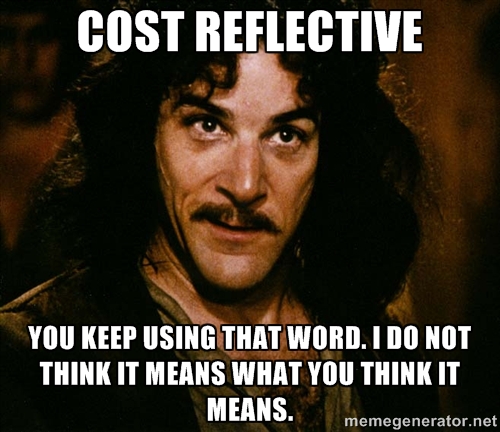
# More problems with Demand Tariffs:

Since the Demand Charge can be extreme and based on a short period, the price instabilities that occur are far worse than those occurring under Time of Use. These instabilities represent discontinuities which appear to violate the clause “retail customers with a similar connection and load profile should be treated on an equal basis”[[12]](#footnote-12).

Demand Tariffs are not cost-reflective for any customers when there are multiple network peaks over a period, as customers who have already been charged Demand once pay nothing more for usage in subsequent network peaks. This is also a price-signal issue, as we have low marginal charges occurring for usage which is very costly to the network during the second and every additional peak. A related problem is that the first X kW of everyone’s Demand during actual peaks are charged only the usage charge, where X is the customer’s individual peak Demand not concurrent with the actual network peak.

Under a monthly Demand tariff, Demand is charged for months where there exist no network peaks at all, nor any real chance of one. It is clear that there will only be peaks in the summer for as long as we can forecast. This means that every effort made by customers in order to save money or just ‘do the right thing’ during other months results in absolutely no real effect on network costs. Some of those efforts can be very difficult or costly, especially considering the difficulty customers face in understanding and responding to the price signal of Demand. This is a perverse outcome that is not just inefficient, but also destructive. Customers do not like being subject to arbitrary prices, and will be understandably angry if they are asked to do tricks for money, but those tricks don’t actually serve any purpose.

In order to have a valid price signal, customers must also be made aware of their peak demand at all times, as well as their current Demand and the endpoints of the Demand Period, which could be problematic. This is especially concerning if the proposed variable Demand periods are approved, making the Demand Period based on ‘whenever the network gets around to reading the meter’. There would be a strong potential for abuse under this system.



# Inigo Montoya’s submission on SAPN’s tariff proposal

# The Energeia Study:

While the Energeia study is a nice comparison of possible tariff outcomes for some customers, cost-reflectivity is an assumption of the study, not a finding. The study calculated each customer’s savings to the network to be its individual peak demand reduction times diversity (the proportion of a customer’s peak that is expected to be part of the network peak). While at first this may seem reasonable, Energeia cautions the reader that SAPN provided it only with ‘representative loads’ for 5 small customer groups, and ordered it to calculate costs based on a fixed ‘diversity’ estimate of 0.5. What this means is that the study could not analyse changes in diversity which occur as a response to each tariff price signal.

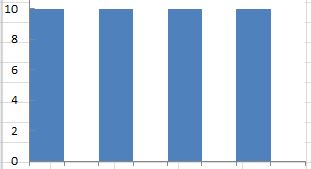


Figure : A customer load profile during the network peak. Diversity = 0.50

Above is a simple load profile for a customer during a hot afternoon. This could be a customer who has an oversized air conditioner, for example, which only runs 50% of the time. It makes sense, then, that the customer’s ‘diversity’ is 0.50, as there is a 50% chance of the customer being fully on and 50% chance of being fully off at the moment of the peak. Therefore, the customer’s expected contribution to peak is 10\*0.5 = 5 kw, as the Energeia study properly calculates.

On a Demand Tariff, this customer has the incentive to install battery storage in order to flatten his load but does not need to shift it all the way out of the peak. If the customer uses, then recharges a battery 4 times during the event, his load profile becomes:

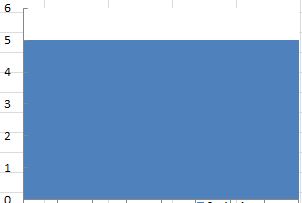


Figure : The customer responded to the Demand Tariff's Price Signal. Diversity has increased to 1.

Clearly this customer has decreased his individual peak from 10kw to 5, but his diversity has risen to 1 (the individual ‘peak’ is fully adding to the network peak, no matter where the network peak occurs). Thus his contribution to the network peak is still 5kw. While not all customers would keep all of their shifted usage in the peak, the load profile in Figure 2 is the profile that SAPN is actually promoting as ‘efficient’ use of the network, and proudly but incorrectly calls this a ‘price signal’[[13]](#footnote-13).

SAPN ordered Energeia to assume that diversity did not change after customers respond and flatten their loads without actually using less energy, as the network wants. While not every customer would end up with diversity 1, it is true that every customer who responds would increase their diversity and that some customers would indeed hit diversity 1. In the study, the consumption charge (kwh) was higher for peak usage than for off-peak, giving customers at least some incentive to get out of the peak. SAPN’s current tariff has the ‘peak’ consumption price set the same as the ‘off-peak’ price, so there is no incentive to do anything else but charge those batteries ASAP after use, even during the peak, and especially if you have solar that you would otherwise be providing to the network for free. This means that in reality, diversity will be higher than what would have resulted from the study, had the effect on diversity been factored into costs. SAPN even gave an estimate that large customers increased their ‘load factor’ by about 10% (5 percentage points) so far due to the price signal in Demand Tariffs. This measure would correspond with Diversity increasing as well, implying increased cost due to the higher expected contribution to peak. Load factor (average over peak Demand, or something similar) is another statistic which does not correspond to individual customer contribution to costs but is portrayed by SAPN as a cost driver.

SAPN also excluded from the study all small customers (<160MWH/year) whose peak demand exceeds 80kVA. Given the problems that these customers face due to the mandatory Demand Tariff, I imagine that none of these customers are able to respond to the Demand price signal at all. Surely they would all have lowered their capacity if they could have, and are now being exploited by the basis of charging which has been implemented by SAPN. These customers may have diversity 0, not needing energy at all during the real network peaks, but are slugged with peak charges under any version of the tariff.

The load profile in Figure 1 also shows the problem of Demand Tariffs failing to treat similar customers similarly. If each on/off cycle is 1 hour on the hour, then the charged Demand is the full 10kw. If each on/off cycle lasts one hour but begins on at 15 minutes past the hour, the demand charge would be just 5 kw (as each peak would contribute to two measured intervals). If each on/off cycle is 30 minutes, then the charged demand is 5kw regardless of starting time. Every possible demand value between 5 and 10 could also occur.

One last example of a perverse outcome from Demand Tariffs is that customers who have air conditioning would usually save money by leaving it on all day rather than switching it on only when they come home. This is because the unit will need to run at full power for longer if the residence starts at a high temperature. By cooling it all day, this slightly longer period of continuous use is prevented. Does this seem efficient to anyone? There are countless more examples of perverse outcomes based on occasional strange uses of energy, but I’m sure SAPN is hearing all about them already from its trial customers so they will be well-informed when it comes time to present their customer impact statement.

# Concluding thoughts:

The AEMC has been clear about its intent in the transition to ‘cost reflective tariffs’ and has been careful not to promote or assume any particular tariff in its publications. One thing it does say appears to contradict SAPN’s one-line rejection of Critical Peak pricing as having to little ‘revenue stability’:

“It is also important to recognise that there are a number of inputs required to convert allowed revenue into annual network charges. Examples include:

-Transmission prices;

-Demand forecasts;

-consumer price index;

-jurisdictional scheme costs; and

-adjustments to the annual revenue allowance to account for any overs/unders, cost pass-throughs or contingent projects.

Some of these inputs can vary significantly from year to year. To minimise risk to revenue recovery, there needs to be an annual process that adjusts network tariff pricing levels that captures changes to these inputs.

Changes to the pricing levels of network tariffs from year to year **should normally be sufficient to address revenue recovery risks created by changes in pricing inputs.**”

<http://www.aemc.gov.au/getattachment/de5cc69f-e850-48e0-9277-b3db79dd25c8/Final-determination.aspx> (Pg 68, emphasis mine)

I do not believe that a one-line rejection of the AEMC’s determination is an appropriate or sufficient argument to show that SAPN deserves to be treated differently from normal distributors. The AEMC clearly envisions a long-run approach to revenue collection, so even if SAPN did have a significant issue with collecting too little/too much revenue in a given year, it would be smoothed out over the coming years. It would probably be more cost-reflective too, charging customers more in years where that service is actually used than in years when it is used little, or not at all.

Regarding the purpose of the rule changes, the AEMC wrote:

There are considerable differences between how individual consumers choose to use energy.

Two households might look the same, with similar incomes and the same family size, but because of the appliances they have and the different lifestyles they lead they may have very different load profiles, ie the amount of electricity they use at different times of the day.

Because each consumer’s network prices currently do not reflect the costs of supplying network services to that consumer, some consumers currently pay more than the costs caused by their usage. Other consumers, in particular those that use a greater proportion of their energy at peak times, pay less than the costs caused by their usage. This is because existing network prices over-recover for off-peak use of the network and under-recover for peak use. (Same document as above, executive summary, page vi)

The key word is ‘proportion’. Peak Demand does not capture any information about the *proportion* of energy used by a particular customer during peak times, because it does not measure volume (kwh) at all. It is no more efficient a measure than charging based on square-feet, or household income, and approximately as cost-reflective. A relationship in general does not show causality, which is an important part of cost-reflectivity.

# Conclusion:

In case it wasn’t clear, I am pleased that the AER refused to fund SAPN’s proposed step changes for applying Demand Tariffs to small customers. I hope that it has not been swayed by the weak arguments that SAPN has made in its revised proposal. We can certainly take up the topic again if SAPN decides to continue pushing its Demand Tariff plans despite the lack of funding for the project. There is no end to the examples of absurd and perverse outcomes that can result from inefficient tariffs that are not cost reflective. The Rules are clear and the AER has the power to enforce them.

What is likely not clear from this submission is that I support Demand being an available choice for customers who are informed and believe that it would be cost reflective for them. We must be sure that the decision is based on facts and reasonable forecasts, and that prices are set to actually reflect the costs to the network, including the cost of increasing one’s ‘diversity’. If all tariffs are priced ‘equally’ (a poorly defined term, I admit) and cost reflectively, then a customer who selects the lowest cost tariff based on his ability to respond to the incentives will have also selected the most efficient tariff in terms of use of the network. Customers who have need for energy all day can certainly save the network costs by lowering peaks during actual critical peaks, but others can do much more to save money and costs on Time of Use or Critical Peak pricing. I’m sure many customers would be unhappy with the price instability of being forced onto Critical Peak Pricing, thus I am forced to reach the same conclusion as the Power of Choice Review: Customer CHOICE is essential for efficient use of and investment in the network. Choice also brings about more revenue stability for the network, an efficient level of revenue reflecting the efficient costs of providing only as much service as each customer wants, and nothing more.

Thank you to the AER for its diligence and the excellent Customer Engagement it has provided to the public. All readers are welcome to contact me via email if you wish to have any further discussion about these topics or related ones.

Best regards,

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1. I’m told this bias also occurs when a diner selects from a wine list but is not familiar with the wines. [↑](#footnote-ref-1)
2. Revised Regulatory Proposal, Attachment H.7, page 3 [↑](#footnote-ref-2)
3. Perhaps more importantly, network prices are a major part of the ‘benefit’ in a customer’s decision on whether to invest in efficiency technology. Any departure from cost reflective network prices would de-stabilize retail markets for energy-related products and services. Please see my submission to COAG Energy Council for more on this topic: <https://scer.govspace.gov.au/files/2015/04/John-Herbst.pdf> [↑](#footnote-ref-3)
4. In the profit formula: Profit = Price \* Quantity – Cost, *customer elasticity of demand* is the proportional decrease in Quantity when Price is increased slightly. Profit is maximized when Elasticity of Demand is just below 1 for each customer. A monopoly which sets prices this way has engaged in ‘Ramsay Pricing’, a known form of discrimination. SA Power Networks’ Demand prices for 2014/2015 appear to be Ramsay Priced. [↑](#footnote-ref-4)
5. Independent analysis of Australian Energy Market Operator’s public data on SAPN, August 2014 to June 2015 [↑](#footnote-ref-5)
6. SAPN Pricing Proposal 2013/2014. VLVS is charged based on Agreed Demand, which is an estimate of a customer’s Peak Demand made before the Actual Demand occurs. [↑](#footnote-ref-6)
7. Energy Networks Association presentation to COAG Energy Council, Melbourne, 5 March 2015 <https://scer.govspace.gov.au/files/2015/03/10.-Energy-Networks-Association-ENA.pdf> Slide 15 [↑](#footnote-ref-7)
8. The evidence gathered from empirical studies of subsets of the population cannot be extrapolated to the population as a whole. In fact, ‘cost-reflectivity’ on average for a subset does not guarantee that the tariff was cost reflective for all elements of the sub-population. It doesn’t even imply that the tariff was cost reflective for every customer in the sample. [↑](#footnote-ref-8)
9. Networks argue that they use customer numbers in order to plan and invest, but any over-investment would be short-term only (not a component of long-term marginal cost). In the long-term, this customer’s lack of real impact is recognized, and contributes to the reduction in necessary infrastructure forecast per connection. [↑](#footnote-ref-9)
10. This is approximately what would have happened to Lakes Sports and Community Club if it had installed 10kw of Solar Panels in 2013, triggering a mandatory switch to Large Business Demand Tariff VLVS. The peak occurred on 3 December, 2013, a day when the maximum temperature at Adelaide Airport was 20C. [↑](#footnote-ref-10)
11. Lakes Sports and Community Club would have this backwards incentive on VLVS or the Sports Club Tariff, as would many other clubs. [↑](#footnote-ref-11)
12. NER version 72, 6.18.4 (a) (2). Previous versions of the Rules listed price instability as an explicit issue. This clause refers to assigning customers to tariff classes, not to tariffs, but lack of an appropriate tariff choice should be reason enough for the AER to intervene on behalf of customers. [↑](#footnote-ref-12)
13. Price signals must be designed to reduce total costs. SAPN’s ‘price signal’ reduces cost per kwh by increasing kwh rather than decreasing costs. “Consume more for best value” is another way to state their ‘price signal’. [↑](#footnote-ref-13)